

REMARKS

Discussion of Amendments. In making the amendments shown above, care has been taken to ensure that the claims remain supported by the specification and that no new matter has been introduced. In accordance with 37 C.F.R. § 1.121, Applicants are attaching to this response pages captioned **VERSION WITH MARKINGS TO SHOW CHANGES MADE**, containing a marked-up version of the claims thus amended, to show the changes relative to the earlier version of such. In the Amendments, Claims 1, 2, 3, 5, and 6 have been cancelled. Claims 4 and 7 have been amended, and new Claims 8 and 9 have been added. The title has been amended and the drawings have been amended in response to the examiner's objections.

I. DRAWING AND TITLE OBJECTIONS

Applicants respectfully submit that the amendment of the title and Figure 13 as proposed in the amendment above obviates the objections.

II. REJECTION OF CLAIMS UNDER § 112, SECOND PARAGRAPH

Applicant respectfully submits that the claims as amended meet the Section 112 objections raised by the Examiner. The term "GPS units" refers to Global Positioning Systems, which are receivers for information from a global positioning satellite, laid in a space to determine a position of a receiving point.

III. REJECTION OF CLAIMS UNDER 35 U.S.C. § 103(A)

Applicants appreciate the time and consideration provided by Examiner in reviewing this application, but respectfully traverse the rejection under 35 U.S.C. § 103(a), and submit that the claims as amended are not obvious over the cited references, for at least the reasons set forth below.

An object of the invention is to lay pipes using a guide laser beam to set the direction of the receptacle for the pipe. The invention as defined in new claim 8 functions as follows: the direction to which the guide laser beam is to be directed, and an angle in a radiated direction of the guide laser beam is obtained, according to the position of the radiator detected by the first GPS unit, the

position of the second GPS unit disposed in the radiated direction of the guide laser beam to reflect it, and the radiated direction of the guide laser beam is directed in the directed direction of the guide laser beam based on the obtained angle.

The invention of this application differs from that of JP'620 in that the system disclosed in JP '620 is a rotational laser system capable of forming an oblique reference plane, with a GPS system to control the grade of the reference plane of the laser beam and to detect the position of a survey machine. The GPS system of JP '620 includes a first GPS receiver 80 mounted on the survey machine, and a second GPS receiver 68 disposed on a known point. The GPS system of JP '620 acts to detect the position of the survey machine 2. A control device in the cited reference acts to control a position (the angle and coordinates) of a blade 5, based on a light-receiving signal from a level sensor 7 which receives a laser beam 4 from the rotational laser system 1 to detect a light-receiving position.

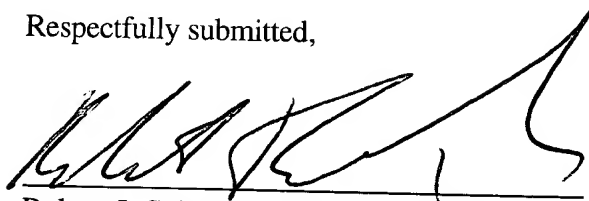
CONCLUSION

Applicants respectfully submit that the claims as presented define the invention in clear and concise patentable terms, and that the objections and rejections of the Office Action have been met. Applicants request favorable treatment of this application.

Please find enclosed our check in the amount of \$110.00 to cover the 37 CFR §1.17(a)(1) fee for a one-month extension of time under 37 CFR §1.136(a), hereby requested, for filing this response. The Commissioner is hereby authorized to charge any additional fees associated with this communication, including any outstanding extension fees, to our Deposit Account No. 50-0305. A return postcard is enclosed.

The Examiner is encouraged to call the undersigned at the direct number (312) 845-3919 with any questions that arise in connection with this application.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'R. J. Schneider', written over a horizontal line.

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Dated: November 26, 2002
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VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS

Claims 1, 2, 3, 5, and 6 have been cancelled.

Claims 4 and 7 have been amended as follows:

4. (Once Amended) [A] An apparatus for setting a guide laser beam [direction setting work system] according to claim [2] 9, wherein [the] said first, second, and third GPS units are each connected to a radio communication unit for transmitting [the] position data, [in horizontal direction;]

the guide laser beam radiator includes a receiver for receiving the position data and arithmetic means for calculating[, based on the position data, the direction in which the guide laser beam is actually radiated, the direction in which the guide laser beam is to be radiated and the] an angle that the radiated direction [in which the] of said guide laser beam [is actually radiated forms to the] and a direction in which the guide laser beam is to be radiated make, based on the position data,; and

[the actual radiation direction of the] said guide laser beam radiator directs [is set in the direction in which] the guide laser beam [is] in said direction to be radiated, based on the result of the calculation by the arithmetic means.

7. (Once Amended) [A] An apparatus for setting a guide laser beam [direction setting work system] according to claim [6] 8, wherein the guide laser beam is operated to scan under [the] control of an optical remote control unit.

New Claims 8 and 9 have been added as follows:

8. (New) An apparatus for setting a guide laser beam comprising:
a guide laser beam radiator for rotatably radiating a guide laser beam;
a first GPS unit for detecting a position of said radiator;
a second GPS unit for determining a direction of radiating of said radiator; and
a reflector provided together with said second GPS unit for reflecting said guide laser beam,

wherein a direction to which the guide laser beam is to be directed and an angle in a radiated direction of the guide laser beam are obtained according to the position of the radiator detected by said first GPS unit, a position of said second GPS unit disposed in the radiated direction of said guide laser beam, and a position of said second GPS unit disposed in the radiated direction of said guide laser beam to reflect said guide laser beam,

said radiated direction of said guide laser beam being directed in said directed direction of said guide laser beam based on said obtained angle.

9. (New) An apparatus for setting a guide laser beam according to claim 8, wherein a third GPS unit is disposed in said direction of radiating of said guide laser beam to reflect said guide laser beam,

a direction to which the guide laser beam is to be directed and an angle in a radiated direction of the guide laser beam are obtained according to the position of the radiator detected by said first GPS unit, a position of said second GPS unit disposed in said directed direction of said guide laser beam, and a position of said third GPS disposed in the radiating direction of said guide laser beam to reflect it, and

said radiated direction of said guide laser beam is directed in said directed direction of said guide laser based on said obtained angle.

IN THE TITLE OF THE INVENTION:

Please amend the title of the invention by deleting the present title, and replacing it with the following title, shown in clean form:

-- APPARATUS FOR SETTING A GUIDE LASER BEAM --

IN THE DRAWINGS:

Please amend Figure 13 of the drawings as shown in the enclosed clean amended drawing sheet, wherein the term "Prior Art" has been added, and reference numerals "13" have been added.

Amendments to Application Serial No. 09/802,067
Submitted with Response to Office Action filed by Applicant on November 26, 2002



**ATTACHED: MARKED-UP DRAWING SHEET SHOWING APPLICANT'S
PROPOSED AMENDMENTS (IN RED)**

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